

### CLAIMS

1. Transfer star-wheel (1), in particular for flexible containers, comprising:  
at least a revolving platform (2);  
a plurality of stations (3) for the containers positioned on said platform (2), each  
5 of which is provided with means for gripping the containers;  
a shaft (5) for supporting the revolving platform (2),  
characterised in that it comprises means for cooling previously sealed portions  
of the containers.
2. A transfer star-wheel as claimed in claim 1, characterised in that said  
10 means for cooling previously sealed portions of the containers comprise:  
at least a pair of jaws (9,10) for gripping said portions of the containers;  
at least a conduit (6,6a) for delivering a cooling fluid to at least one of said jaws  
(9,10);  
at least a conduit (7,7a) for returning the cooling fluid from said jaw (9,10);  
15 at least a conduit (8) for discharging the cooling fluid after it has thermally  
interacted with at least one jaw (9,10).
3. A transfer star-wheel as claimed in claim 2, characterised in that said  
pair of jaws (9,10) comprises a first fixed jaw (9) and a second jaw (10), movable away  
from the first one, to allow an insertion of the sealed portions of a container between  
20 said jaws (9,10).
4. A transfer star-wheel as claimed in claim 3, characterised in that it  
comprises means for actuating said second jaw (10) to move it away from the first one.
5. A transfer star-wheel as claimed in claim 4, characterised in that said  
actuating means comprise:  
25 a plurality of rod-like elements (11,12,13) kinematically connected to each other

in order substantially to define an articulated quadrilateral, two of said rod-like elements (11,12,13) being pivotally connected to an appendage (30) integrally connected to said fixed jaw (9), the second jaw (10) being connected to at least one of the rod-like elements (11,12,13);

5           at least a cursor (14) slidably movable with reciprocating motion along a support guide (15), positioned on the rotating platform (2) at a pre-set distance from the support shaft (5);

            at least a rod (16) having a first end (16a) connected to at least one of the rod-like elements (11,12,13) pivotally connected to the appendage (30) and a second end (16b)  
10       connected to said cursor (14);

            a second guide (17), serving substantially as a cam, positioned around the support shaft (5) of the revolving platform (2) and operatively active on a roller (18) pivotally engaged to said cursor (14).

6.           A transfer star-wheel as claimed in claim 2, characterised in that said  
15       delivery conduit (6,6a) and said return conduit (7,7a) are at least partially contained within said support shaft (5) of the revolving platform (2).

7.           A transfer star-wheel as claimed in claim 6, characterised in that the delivery conduit (6,6a) is at least partially defined by a flexible tubular body (6a) positioned externally to the support shaft (5) of the revolving platform (2).

20       8.           A transfer star-wheel as claimed in claim 6, characterised in that the return conduit (7,7a) is at least partially defined by a flexible tubular body (7a) positioned externally to the support shaft (5) of the revolving platform (2).

            9.           A transfer star-wheel as claimed in claim 1, characterised in that the gripping means comprise at least a pincer (19) positioned on the revolving platform (2)  
25       at a pre-set distance from the support shaft (5).

10. A transfer star as claimed in claim 9, characterised in that it comprises means for moving each pincer (19) in a radial direction.

11. A transfer star as claimed in claim 10, characterised in that said means for moving each pincer (19) in a radial direction comprise:

5 at least a sliding seat (20) for a frame (21) of the pincer (19);

a discoidal body (22) connected to the support shaft (5) and having at least a groove (23) substantially defining a cam;

at least a roller (24) connected to the frame (21) of the pincer (19) and slidably housed in said groove (23) present on the discoidal body (22).

10 12. A transfer star as claimed in claim 2, characterised in that the delivery conduit (6,6a) and the return conduit (7,7a) are directly connected to at least one of said jaws (9,10).

13. A method for cooling flexible containers, comprising the steps of:

15 collecting the flexible containers at the output of a first station for forming and sealing the containers;

transferring the flexible containers from said first station to a second processing station,

characterised in that it comprises a step of forced cooling of the flexible containers simultaneously with said step of transferring the containers.

20 14. A method as claimed in claim 13, characterised in that said cooling step occurs by indirect heat exchange with a cooling fluid.

15. A method as claimed in claim 14, characterised in that said cooling fluid is water at a temperature within a range of about 12°C to 20°C.

16. An installation for filling flexible containers, comprising:

25 at least a star-wheel for forming the flexible containers, by sealing portions

thereof;

at least a star-wheel for filling the flexible containers;

at least a transfer star-wheel for transferring the formed containers, from the forming star-wheel to the filling star-wheel,

5 characterised in that said transfer star-wheel comprises means for cooling the previously cooled portions of the containers.